

Translation

PATENT COOPERATION TREATY

PCT/EP2003/009231



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P13482WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/009231	International filing date (day/month/year) 20 August 2003 (20.08.2003)	Priority date (day/month/year) 21 August 2002 (21.08.2002)
International Patent Classification (IPC) or national classification and IPC H04L 12/56		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>5</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 18 February 2004 (18.02.2004)	Date of completion of this report 07 December 2004 (07.12.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009231

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-15, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-16, filed with the letter of 05 October 2004 (05.10.2004)
- ☒ the drawings:
 pages 1/4-4/4, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/EP 03/09231

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations

1. Subject matter of the invention:

The invention relates to a method for routing data packets (claim 1) in a packet network that consists of internal routers and edge routers, and to an internal router (claim 16) and an edge router (claim 16) of the type described.

2. Prior art:

A method is known from document EP-A-1 045 553 whereby connections can be switched between local networks in a core network having internal routers and edge routers. The core network uses a tunnel in which the address of the edge router at the network output is taken into account consulted for routing.

3. Problem:

The problem associated with the above configuration is that a distribution of traffic is required in the core network for better capacity utilization and availability. For this purpose, establishing alternative routes by means of which the traffic can be distributed or

diverted is known from document EP-A-0 465 090. In this context, the additional problem arises that looping could occur, in other words, that a data packet could pass through a network node multiple times. In order to prevent this, costly calculations of the routing tables are carried out according to document EP-A-0 465 090 to guarantee that the network is cycle-free.

4. Solution:

According to the invention, an alternative solution is proposed in which the origin, i.e. the address of the edge router where a packet enters into the core network, is also considered for the routing decision.

Although routing with the aid of the origin address is well-known from document US-B1-6 185 619, a route is chosen through the core network only upon entry into the core network according to the origin address. Document US-B1-6 186 619 does not suggest either the alternative routes or their selection by means of the origin address in the core network.

5. Conclusions:

The inventive method allows the cases in which alternative routes are provided to be differentiated easily in the routing tables of the individual network nodes. This is illustrated in figure 4.

Therefore, the subject matter of independent claims 1 and 16 satisfies the PCT requirements with respect to novelty and inventive step (PCT Article 33(2) and (3)). Claims 2 to 15 are dependent upon claim 1 and are thus likewise novel and inventive. The subject matter of

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/EP 03/09231

claims 1 to 16 is also obviously industrially
applicable (PCT Article 33(4)).